

REMARKS

I. Introduction

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of July 16, 2009 is respectfully requested.

By this amendment, claims 1, 3, 15, 16, 20, 22, 24-26, 28, 30, 33, and 35 have been amended, claims 2, 4-14, 27, and 31 have been cancelled without prejudice or disclaimer to the subject matter contained therein, and claims 36-43 have been added. Claims 1, 3, 15-26, 28-30, and 32-43 are now pending in the application. No new matter has been added by these amendments.

The specification has been reviewed and revised. No new matter has been added by these revisions. Entry of the specification amendments is respectfully requested.

II. 35 U.S.C. § 112

On page 2 of the Office Action, claims 3, 15, 26, 27, 30, and 31 are rejected as being indefinite for including an unclear recitation. Claims 3, 15, 26, and 30 have been amended to remove this recitation, and claim 27 and 31 have been cancelled. Applicants thus respectfully request withdrawal of these rejections.

III. Double Patenting

Beginning on page 10 of the Office Action, claims 1, 3, 16, 18, and 35 are rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 11-15 of copending Application No. 11/108,749, and claims 1, 16, 18, and 35 are rejected on

the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 11/071,469.

Applicants respectfully request that this rejection be held in abeyance until such time as the claims are otherwise found to be allowable.

IV. Prior Art Rejections

Currently, five duplicative prior art rejections are asserted against claims 1-3 and 15-35 under 35 U.S.C. § 103(a); the prior art rejections are as follows:

- A. Claims 1-3 and 15-35 are rejected as being obvious over Sakai et al. (JP 02138442) in view of Takeshi et al. (JP 08-109450).
- B. Claims 1-3 and 15-35 are rejected as being obvious over Sandberg (WO 2002/070769) in view of Takeshi et al. or Morishita et al. (JP 363262402) or Iijima et al. (JP 363262402).
- C. Claims 1-3 and 15-35 are rejected as being obvious over Sandberg (US 7,297,177) in view of Takeshi et al. or Morishita et al. or Iijima et al.
- D. Claims 1-3 and 15-35 are rejected as being obvious over Pinnow (US 5,936,169) in view of Takeshi et al. or Morishita et al. or Iijima et al.
- E. Claims 1-3 and 15-35 are rejected as being obvious over Non-Patent Literature disclosed as document AO on the Information Disclosure Statement of January 5, 2006 (herein referred to as “NPL”) in view of Takeshi et al. or Morishita et al. or Iijima et al.

Claim 1 is patentable over Sakai et al., Takeshi et al., Sandberg '769, Morishita et al., Iijim et al., Sandberg '177, and NPL, whether taken alone or in combination, for the following reasons. Claim 1 requires a sintered sliding member comprising a back metal and a ferrous sintered sliding body, the ferrous sintered sliding body being connected to the back metal, wherein said ferrous sintered sliding body comprises martensite phase having a solid soluble carbon concentration of 0.15 to 0.5wt% and contains carbide in a content of 5 to 50% by volume, wherein said ferrous sintered sliding body includes a sliding surface, and wherein said ferrous sintered sliding body is formed with at least one of closed pores and recesses at the sliding surface in an area ratio of 1 to 10%.

In making prior art rejections A through D, the Examiner acknowledges that none of the prior art of record discloses the ferrous sintered sliding body being formed with at least one of closed pores and recesses on the sliding surface in an area ratio of 1 to 10%. (See item 11 on pages 3-4 of the Office Action with respect to rejection A, see item 19 on page 5 of the Office Action with respect to rejection B, see item 26 on page 7 of the Office Action with respect to rejection C, and see item 33 on page 9 of the Office Action with respect to rejection D.) However, in each of these rejections, the Examiner asserts that it would have been obvious to modify the prior art to have this claim requirement because “it is a well know metallurgical concept to control pores and/or recesses at metal sliding surface in order that lubricant may pass through or can be impregnated to thereby improve wear or abrasion resistance, see English abstract of JP-450.”

As discussed at length in the specification of the present application, the area ratio range required by claim 1 allows the sliding member to discharge gas generated during bonding to the back metal, and also allows the sliding member to hold oil pockets so as to improve heat crack

resistance. (See page 19, line 25 through page 21, line 8; see also page 69, lines 6-26.) The prior art rejection appears to assert that an area ratio of closed pores and/or recesses is a result effective variable (see MPEP 2144.05(II)), which would be optimized by one skilled in the art to improve lubrication and abrasion resistance. However, the assertion that it would have been obvious to modify the prior art in order to optimize a certain variable is not enough to support an obviousness rejection; it must be shown that one skilled in the art would optimize that variable to yield the claimed range. The prior art rejection in the present application does not assert that the area ratio of closed pores and/or recesses would be optimized to yield the claimed area ratio range of 1-10%, and there is no evidence to suggest that modifying the area ratio for the purpose of optimizing lubrication and wear resistance would result in the range of the present application, which is disclosed as being optimal for a completely different purpose. In other words, modifying the area ratio of the prior art for the purpose of optimizing lubrication and wear resistance would not necessarily lead to the claimed configuration, which is disclosed as being optimal for heat crack resistance and gas discharge.

Moreover, prior art rejection E, on pages 9 and 10 of the Office Action, fails to address the above-discussed limitation of claim 1, and does not include any assertion that the NPL reference discloses or renders obvious the claimed area ratio. As such, the arguments set forth above with respect to rejections A through D also support the patentability of claim 1 over the NPL reference cited in rejection E. Because none of the prior art of record discloses a ferrous sintered sliding body being formed with at least one of closed pores and recesses at the sliding surface in an area ratio of 1 to 10%, and because it appears that there would have been no reason to modify any of the prior art to have such a configuration, claim 1 is not anticipated or rendered obvious by the prior art of record.

With respect specifically to prior art rejections B and C, the Sandberg references do not disclose a ferrous sintered sliding body. In particular, Sandberg ‘769 discloses a steel article which is not sintered, but instead produced by using a molten metal spray. (See page 4, lines 22-25 “The article of the invention is manufactured by a technique which includes spray forming, in which drops of molten metal are sprayed against a rotating substrate on which the drops rapidly solidify to form a successively growing ingot.”) The Sandberg ‘177 reference discloses a metal article manufactured in a similar method using molten spray, rapid cooling, and hot isostatic pressing. (See column 4, lines 28-47.) In contrast, claim 1 requires a ferrous sintered sliding body. As is well known in the art, a sintered metal article has a different structure from metal articles produced using other methods. Because neither the Sandberg ‘769 reference nor the Sandberg ‘177 reference discloses a ferrous sintered sliding body, those references cannot meet the requirements of claim 1.

With respect to prior art rejections A and D specifically, each of these rejections contains an assertion that a requirement of claim 1 “would be expected since composition and process of making by sinter bonding are closely met and in absence of evidence to the contrary.” (Emphasis added, see item 10 on page 3 of the Office Action with respect to rejection A, and see item 32 on page 8 of the Office Action with respect to rejection D.) Rejection E contains the very similar assertion that “although martensite phase is not disclosed, such would be expected since composition and carbide limitation are closely met.” (see item 37 on page 10 of the Office Action.) Applicants are unaware of any authority established by the MPEP or case law which allows for a claim limitation to be addressed merely by saying it would be “expected” to be present in the prior art because the prior art discloses a similar composition. To the contrary, each and every limitation of a claim must be present in the prior art in order to support a prior art

rejection. The prior art rejections A, D, and E do not assert that the claim limitations are disclosed in the prior art, they do not assert that these limitations would be inherent, and they do not assert that it would have been obvious to modify the prior art to have these limitations. Accordingly, these prior art rejections are improper for failing to show that each and every limitation is met by the prior art.

Further, it appears as though there would have been no reason to modify any of the prior art of record to yield a configuration which would meet the requirements of claim 1. It is thus submitted that the invention of the present application, as defined in claim 1, is not anticipated nor rendered obvious by the prior art, and yields significant advantages over the prior art. Allowance is respectfully requested.

Claims 1, 3, 15-24, 26, 28-30, and 32-35 depend, directly or indirectly, from claim 1 and are thus allowable for at least the reasons set forth above in support of claim 1. Each of claims 25 and 36-43 require limitations substantially identical to those discussed above with respect to claim 1, and Applicants submit that these claims are also allowable for at least the reasons set forth above with respect to claim 1.

Moreover, independent claim 25 further requires a sintered sliding member wherein said ferrous sintered sliding body is formed into a doughnut shape and at least a part of an inner surface and an under surface thereof is sintering-bonded to said back metal, and wherein a part of a bonded surface of said ferrous sintered sliding body and said back metal is formed with at least either one of ventholes and grooves through which gas generated from the ferrous sintered sliding body at sintering-bonding is discharged. Accordingly, in addition to being allowable for the reasons set forth in support of claim 1, claim 25 sets forth further limitations which are not disclosed or rendered obvious by the prior art.

In view of the foregoing amendments and remarks, inasmuch as all of the outstanding issues have been addressed, Applicants respectfully submit that the present application is now in condition for allowance, and action to such effect is earnestly solicited. Should any issues remain after consideration of the response, however, the Examiner is invited to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,

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January 11, 2010